



SINGLE FAMILY DWELLING NON-STRUCTURAL PLAN CHECKLIST -2013 CRC

PLANNING & BUILDING DEPARTMENT • COUNTY OF SAN LUIS OBISPO
976 OSOS STREET • ROOM 200 • SAN LUIS OBISPO • CALIFORNIA 93408 • (805) 781-5600

BR01

HEIGHT CERTIFICATION REQUIRED

Building permits shall have the following conditions placed on the project and noted on the title sheet(first page) of the plans:

- Prior to any site disturbance, a licensed surveyor shall establish average natural grade (high and low corners staked) and set a reference (benchmark) point.
- Prior to Roof Nailing inspection, the applicant shall provide written verification to the building inspector certifying the building height including the actual and allowable approved building heights. The certification shall be done by a licensed surveyor.

In addition, to avoid errors or costly modifications to structures under construction please have the topography map prepared by a licensed surveyor.

BR02

LOCATION ON THE PROPERTY:

Exterior walls of Dwellings with automatic residential fire sprinkler protection that are less than 3 ft. from the property line shall be one-hour fire-resistive rated with exposure from both sides per CRC Table R302.1(2). Add notes and details for the construction of the applicable exterior walls.

Openings (doors, windows, vents, etc.) in exterior walls of Dwellings with automatic residential fire sprinkler protection are not allowed closer than 3 ft from the property line per CRC Table R302.1(2).

Projections (*cornices, eave overhangs, exterior balconies and similar projections*) of Dwellings with automatic residential fire sprinkler protection are not required to be protected when at least 3 ft. from the property line. Projections are required to be 1 hour fire-resistance rating on the underside when located between 2 and 3 ft. from property line per CRC Table R302.1(2).

Penetrations in exterior walls that are less than 3 ft. from property line shall be protected in accordance with CRC R302.4.

For Dwellings without automatic residential fire sprinkler protection, refer to CRC Table

R302.1(1) for walls, projections, openings and penetrations protection.

BR03

GARAGE-TO-HOUSE SEPARATION

- ½ -inch gypsum board required on the garage side separating dwelling and attic area from the garage per CRC Table R302.6. This also includes garages that are located less than 3 feet from a dwelling unit on the same lot.
- Minimum 5/8-inch type "X" gypsum board applied on the garage or carport side with habitable rooms located above with minimum ½ -inch gypsum board on walls supporting such floors/ceilings per CRC Table R302.6.
- Minimum 1-3/8 inch thick, self-closing and self-latching, solid-core wood, steel honeycomb door or 20-minute fire rated door per CRC R302.5.1.
- When the residence and the private garage are protected by an automatic residential fire sprinkler system per CRC R309.6 and R313, the door only needs to be self-closing and self-latching.
- Minimum No. 26 gage sheet steel (0.019-inch sheet steel) with no openings into the garage for ducts in the garage and ducts penetrating the walls or ceilings that separate the dwelling from the garage per CRC R302.5.2.
- There shall be NO openings from a private garage directly into a room used for sleeping purposes per CRC R302.5.1.
- Garages and carports shall also comply with CRC R309 (floor surface, sprinklers, flood areas, etc.).
- Minimum 5-foot high corner guards or metal jacketing for fire-protected columns and posts subject to vehicular impact

BR04

SMOKE ALARMS, CRC R314.3

Smoke alarms shall be provided at the following locations:

In each sleeping room

Outside each separate sleeping area in the immediate vicinity of the bedrooms

In each story, basement, habitable attic or spilt level within a dwelling unit

Smoke alarms shall sound an alarm clearly audible in all bedrooms (*when more than one smoke alarm is required, the smoke alarms shall be interconnected*) per CRC R314.5.

Smoke alarms shall receive their power from the building wiring (where such wiring is served from a commercial source) and shall be equipped with a battery backup per CRC R314.4.

For alterations, repairs, or additions, or when one or more sleeping rooms are added/created, the smoke alarms shall be required for new dwellings per CRC R314.3.1.

BR05

CARBON MONOXIDE ALARMS, CRC R315.1

In new construction, carbon monoxide alarms shall be installed in dwelling units that have attached garages and dwelling/sleeping units within which fuel-burning appliances are installed. Per CRC R315, carbon monoxide alarms shall be located in the following locations:

Outside of each separate dwelling unit sleeping area in the immediate vicinity of the bedrooms

On every level of a dwelling unit including the basement

Carbon monoxide alarms shall receive their power from the building wiring (where such wiring is served from a commercial source) and shall be equipped with a battery backup per CRC R315.1.2.

When more than one carbon monoxide alarm is required to be installed, the alarms shall be interconnected in a manner that activation of one will activate all per CRC R315.1.3.

Carbon monoxide alarms shall be listed per UL 2034 and carbon monoxide detectors shall be listed per UL 2075.

For alterations, repairs, or additions exceeding \$1,000, existing dwelling/sleeping units that have attached garages or fuel-burning appliances shall be provided with a carbon monoxide alarm.

BR06

EMERGENCY ESCAPE AND RESCUE, CRC R310

Basements, habitable attics and every sleeping room shall have at least one operable emergency escape and rescue opening per CRC R310.1.

Where basements contain one or more sleeping rooms, emergency egress and rescue openings shall be required in each sleeping room.

Emergency escape and rescue openings (doors and windows) shall open directly into a public way or to a yard or court that opens to a public way.

Basements used only to house mechanical equipment and having no more than 200 sq. feet in floor area shall not be required to have emergency escape windows.

Clarify the following clearances on the plans:

Minimum net clear opening of 5.7 square feet per CRC R310.1.1.

For grade-floor openings, *the minimum net clear opening may be 5.0 square feet.*

Minimum net clear opening height of 24 inches

Minimum net clear opening width of 20 inches

The bottom of the emergency escape and rescue clear opening shall not be greater than 44 inches measured from the floor per CRC R310.1.

BR07

WINDOW WELLS

When the finished sill height of the emergency escape and rescue window is below the adjacent ground level the window is to have a window well per CRC 310.1 and 310.2.

BR08

OPERABLE WINDOW < 24" OFF THE FLOOR - FALL HAZARD FROM SECOND (OR GREATER) FLOOR

Where the opening of the sill portion of an operable window is located more than 72" above finished grade or other surface below, the lowest part of the clear opening of the window shall be 24" above the finished floor surface of the room served per CRC R312.2.

BR09

EXITS

Exits through intervening rooms, CRC R311.1: For one and two family dwellings, the means of egress is allowed to pass through intervening rooms/spaces except garages.

BR10

NUMBER OF EXITS, CRC R311.2

At least one egress door shall be provided for each dwelling unit (only one exit is required for R-3 occupancy). The exit door shall provide a

minimum clear width of 32" and minimum clear height of 78" per CRC R311.2.

BR11

2ND EXIT REQUIRED FROM THIRD FLOOR OR SECOND LEVEL BASEMENT

The maximum travel distance from any occupied point to a stairway/ramp shall be 50'-0" for habitable levels or basements that are located **more** than one story above/below an egress door per CRC R311.4.

BR12

TEMPERATURE CONTROL

Every dwelling unit shall be provided with heating facilities capable of maintaining a minimum room temperature of 68°F at a point 3 feet above the floor and 2 feet from exterior walls in all habitable room at the design temperature per CRC R303.9. Specify the equipment(s) type and location that provides compliance with this code section.
Note: Portable space heaters shall not be used for compliance.

BR13

GUARDS (GUARDRAILS)

Guards to be a minimum of 42 inches in height and have intermediate railings spaced so that a sphere 4-inches in diameter cannot pass through per CRC R312.2 and 312.3. Add details and cuts on the drawings where applicable. If the guard whose top rail also serves as a handrail, it shall have a height not less than 34 inches and not more than 38 inches above the treads (the railings to be spaced so that a 4.375 inch sphere cannot pass through). CRC R312.2 and R312.3.

BR14

FIREBLOCKING IS REQUIRED AT THE FOLLOWING LOCATIONS PER CRC R302.11:

In concealed spaces of stud walls and partitions vertically at the ceiling and floor levels and horizontally at intervals not exceeding 10 feet.

At all interconnections between concealed vertical and horizontal spaces (soffits, drop ceilings, cove ceilings).

In concealed spaces between stair stringers at the top and bottom of the run.

At openings around vents, pipes, ducts, cables and wires at ceiling and floor level.

All spaces between chimneys and floors and ceilings through which the chimneys pass. Refer to CRC R1003.19.

The fireblocking or spaces between chimneys and wood joists, beams, or headers shall be self-supporting or be placed on strips of metal or metal lath laid across the spaces between combustible material and the chimney.

BR15

SHOWER SURFACES

Shower compartments and walls above bathtubs with installed shower heads shall be finished with a nonabsorbent surface to a height not less than 6 feet above the floor per CRC R307.2.

"Green board" can no longer be used in tub or shower areas. Fiber-cement, fiber-mat reinforced concrete, glass mat gypsum backers, or fiber-reinforced gypsum backers shall be used as a base for ceramic wall tiles in tub and shower areas as well as wall panels in shower areas per CRC R702.4.2.

BR16

LANDINGS AT DOORS

Landings are to have a length in the direction of travel of at least 36 inches on each side of the door per CRC R311.3.

Exterior landings shall have a maximum slope of 2%.

Maximum for landings under door thresholds, CRC R311.3.2: The landing at an exterior door shall not be more than 7.75 inches below the top of the threshold, provided the door does not swing over the landing.

When the door swings over the landing/floor, the landing/floor shall not be lower than 1-1/2" from the top of the threshold.

Note: A landing is not required where a stairway of 2 or fewer risers is located on the exterior side of the door and the door does not swing over the stairway per CRC R311.3.2.

BR17

CEILING HEIGHT

Minimum ceiling height for habitable space, hallways, bathrooms, toilet rooms, laundry rooms, etc. shall be 7 feet per CRC R305.1.

Exception: For rooms with sloped ceilings, at least 50 percent of the required floor area of the

room must have a ceiling height of at least 7 feet and no portion of the required floor area may have a ceiling height less than 5 feet.

Minimum hallway width shall be 36" per CRC R311.6.

BR18

STAIRWAYS, CRC R311.7

Furnish construction details/sections for the (interior and/or exterior) stairs. Provide details showing how the stairs are attached to the second and first floor framing.

Widths of stairs are not to be less than 36 inches per CRC R311.7.1.

The stair treads shall have a run of at least 10" and the risers shall have maximum rise of 7.75" per CRC R311.7.5.

Open risers are permitted as long as the opening between treads does not permit the passage of a 4" sphere per CRC R311.7.5.1.

Handrails are to be installed per CRC R311.7.8: Stairways shall have a handrail on at least one side of each continuous run of treads or flight. Handrails are not required for stairs with 3 or less risers.

Between 34 and 38 inches above the nosing of the tread and landings.

Handrails are to be continuous for the length of the stair.

Clearly show how the handrail will terminate (in a newel post or into wall) per CRC R311.7.8.2.

Detail the handgrip portion of the handrail and clearance from the wall per CRC R311.7.8.2 and R311.7.8.3. Circular handgrips shall be between 1-1/4 to 2". There shall be a minimum 1-1/2" clearance from the wall.

Enclosed accessible spaces under the stairs to have the walls, under stair surface and soffits protected on the enclosed side by 1/2 inch gypsum board per CRC R302.7.

Every stairway is to have a headroom clearance of at least 6'8" per CRC 311.7.2

Winders are to be at least 6" wide where the tread is most narrow per CRC R311.7.4.

Stairway illumination: Interior stairways shall be provided with an artificial light source capable of illuminating treads and landings to levels not less than 11 lux and shall be located in the immediate vicinity of each landing per CRC R303.6. Exterior stairways shall have an artificial light source

located in the immediate vicinity of the top landing of the stairway. Exterior basement stairs shall have lighting at the bottom landing.

Interior stairs with 6 or more risers shall have a wall switch at each floor level to control the lighting.

Exterior stair illumination shall be controlled from the inside of the dwelling unit.

Spiral Stairways are permitted to be used as a component in the means of egress within dwelling units and shall comply with CRC R311.7.1.

BR19

LIGHT AND VENTILATION: PER CRC R303.1

All habitable rooms (living, sleeping, eating, or cooking) shall have natural light and ventilation provided unless specific exceptions are met.

Minimum 8% of the floor area shall be provided for natural light.

Minimum 4% of the floor area shall be provided for natural ventilation

Required glazed openings shall open directly onto a street or public alley or a yard or court that is located on the same lot as the building per CRC R303.8.

BR20

BATHROOM VENTILATION: REQUIRED BY ENERGY CODE

Specify CFM of the bathroom fan and if will be used for required whole house ventilation. Each bathroom containing a bathtub, shower or tub/shower combination shall be mechanically ventilated for purposes of humidity. The minimum local exhaust rates shall be 50 cfm for intermittent ventilation or 20 cfm for continuous ventilation..(CRC R303.3)

BR21

HUMIDITY CONTROL REQUIRED ON BATHROOM FANS

Please add these notes for bathroom fans:

Fans shall be ENERGY STAR compliant and be ducted to terminate outside the building.

2. Unless functioning as a component of a whole house ventilation system, fans must be controlled by a humidity control.

a. Humidity controls shall be capable of adjustment between a relative humidity range of 50 percent to a maximum of 80 percent. A

humidity control may utilize manual or automatic means of adjustment.

b. A humidity control may be a separate component to the exhaust fan and is not required to be integral (i.e., built-in).

Notes:

1. For the purposes of this section, a bathroom is a room which contains a bathtub, shower, or tub/shower combination.
2. Lighting integral to bathroom exhaust fans shall comply with the California Energy Code.

BR22

DECK DRAINAGE

Decks & balconies that are sealed underneath are to be waterproofed and have a minimum 2% slope for drainage. Show how the deck drains with two drains if contained.(CRC R903.1)

BR23

VENEERS OR STUCCO STONE

Masonry and stone veneer shall comply with CRC R703.7.

Exterior veneer support shall be provided per CRC R703.7.2. Refer to CRC Figures for detailing.

Masonry veneers shall be anchored to the supporting wall per CRC R703.7.4 (metal ties).

BR24

UNDERFLOOR VENTILATION

Indicate on foundation plan location and size of underfloor vents per the following (CBC 1203.3):

- Minimum 1 foot of net vent area required for every 150 square feet of underfloor area (as demonstrated by calculation provided on foundation plan).
- Located to provide adequate cross-ventilation to all underfloor areas

BR25

CRAWL SPACES

Indicate on foundation plan location of minimum 18-inch by 24-inch access openings to all underfloor areas. (CBC 1209.1)

BR26

PROTECTION AGAINST DECAY AND TERMITES

Dimension underfloor clearance off grade of 18 inches for floor joists and 12 inches for floor

girders or specify preservative-treated wood. (CBC 2304.11.2.1)

BR27

ATTIC ACCESS

Access is to be provided for areas where there is an attic space that exceeds 30 square feet and has at least 30" headroom clearance per CRC R807.1. The opening is to be at least 22"X30" with minimum headroom of 30". Locate in a hallway or other readily accessible location.

BR28

DRAFTSTOPS PER CRC R302.12,

Draftstops shall be installed in combustible construction where there is usable space both above and below the concealed space of a floor/ceiling assembly (attic, etc.).

Draftstops shall be installed to limit the area of the concealed space to **1,000 square feet**.

Draftstopping shall divide the concealed spaces into approximately equal areas.

BR29

ATTIC AND RAFTER VENTILATION

Enclosed attics and enclosed rafter spaces formed where ceilings are applied directly to the underside of roof framing members shall have cross ventilation for each separate space by ventilating openings protected against the entrance of rain and snow per CRC R806.1. Furnish on the drawings attic ventilation calculations and specify the size and location/spacing of the vents.

Option 1: The total net free ventilating area shall not be less than 1/150 of the area of the space ventilated.

Option 2: The total net free ventilating shall not be less than 1/300 of the area of the space ventilated when at least 50% and not more than 80% of the required ventilating area is provided by ventilators located in the upper portion, at least 3'0" above the eave or cornice vents and the balance to be provided by eave or cornice vents.

Option 3: The net free cross-ventilation area may be 1/300 when a Class I or II vapor barrier is installed on the warm-in-winter side of the ceiling. A minimum of 1" of airspace shall be provided between the insulation and the roof sheathing at the vent location per CRC R806.3.

Ventilation openings shall be provided with corrosion-resistant wire cloth screening, hardware cloth, or similar material with openings having a least dimension of minimum 1/16" and maximum 1/4" per CRC R806.1.

Unvented attic assemblies shall comply with CRC R806.5 (ALL conditions must be met). ICC Research Report required to be submitted for closed cell foam.

BR30

ROOFING REQUIREMENTS

Note Type 15 felt underlayment for composition roof covering per CRC R905.2.3.

For roof slopes from 2:12 up to 4:12 for asphalt shingles, double underlayment application is required per CRC R905.2.2 and R905.2.7 (4:12 or greater requires only one layer).

Note Type 30 felt underlayment for tile roofs per CRC R905.3.3.

For roof slopes from 2-1/2:12 up to 4:12 for clay or concrete tile, double underlayment application is required per CRC R905.3.2 and R905.3.4 (4:12 or greater requires only one layer).

BR31

GUTTERS DOWNSPOUTS AND DRAINAGE SYSTEM REQUIRED

If the soil is expansive or collapsible, a controlled method of water disposal shall be provided to collect and discharge roof drainage to the ground surface at least 5'0" from foundation walls or to an approved drainage system per CRC R801.3.

BR32

TEMPERED GLAZING

Glazing subject to human impact to be TEMPERED per CRC R308.3, R308.4.

Glazing to be TEMPERED where the nearest exposed edge of the glass is within a 24" arc of either vertical edge of the door in a closed position and the bottom edge of the glazing is less than 60" above walking surface.

Glazing to be TEMPERED when adjacent to stairways, landings, ramps within 36" horizontally of the walking surface and the exposed surface of the glazing is less than 60 inches above the walking surface.

Glazing to be TEMPERED when in enclosures for or walls facing hot tubs, whirlpools, saunas, steam rooms, bathtubs and showers where the

bottom exposed edge of glazing is less than 60" above any standing or walking surface.

See W.U.I. requirements for tempered glazing throughout, including skylights.

Skylights and sloped glazing shall comply with CRC R308.6 (materials, screens, curbs, etc.) & W.U.I.

BR33

SUNROOM OR PATIO ENCLOSURE

SUNROOM:- A one-story structure attached to a dwelling with a glazing area in excess of 40 percent of the gross area of the structure's exterior walls and roof.

PATIO COVER: 1103.1 Enclosure walls. Enclosure walls shall be permitted to be of any configuration, provided the open or glazed area of the longer wall and one additional wall is equal to at least 65 percent of the area below a minimum of 6 feet 8 inches of each wall, measured from the floor. Openings shall be permitted to be enclosed with insect screening, approved translucent or transparent plastic not more than 0.125 inch (3.2 mm) in thickness, glass conforming to the provisions of Chapter 24 or any combination of the foregoing.

Show conformance with one of the two above definitions by showing the wall area calcs on the plans or provide energy calculations and show how the space is heated as a room addition.

BR34

EXTERIOR WALLS

Note on the plans that the stucco to be applied with three coat application when applied over metal lath or wire lath per CRC R703.6.2.

Specify manufacturer & ICC Report number for the ONE-COAT stucco system. Provide a vapor barrier behind all ONE-COAT stucco systems in conformance with the ICC report & CBC requirements.

Provide weep screed details at all locations including porch, patio, garage, & built up stucco columns. The screed is to be of a type that will allow trapped water to drain to the exterior of the building. The screed is to be placed a minimum of 4" above the earth or 2" above paved areas per CRC R703.6.2.1.

Specify 2-layers of Grade "D" paper under the cement plaster covering when applied over wood sheathing per CRC R703.6.3.

BR35

FIREPLACE AND CHIMNEY CRC CHAPTER 10: AND APCD REQUIREMENTS

All fire places to be EPA-II or be on APCD list. Regular masonry fireplaces are not allowed. Masonry fireplaces shall comply with CRC R1001.

Furnish complete detailing showing the foundation, seismic reinforcing, seismic anchorage, etc. Refer also to CRC Table R1001.1 and Figure R1001.1 for typical requirements.

Hearths for masonry fireplaces are to extend at least 16" in front and at least 8" beyond each side of the fireplace opening per CRC R1001.10.

Where masonry fireplace openings are 6'0" or greater, the hearth extension is to extend at least 20" in front and at least 12" beyond each side of the fireplace opening per CRC R1001.10.

Masonry heaters shall comply with CRC R1002.

Masonry chimneys shall comply with CRC R1003.

Furnish complete detailing showing the foundation, thickness, seismic reinforcing, seismic anchorage, clearance to combustibles, etc. Refer also to CRC Table R1001.1 and Figure R1001.1 for typical requirements.

Wood framing shall not support a masonry chimney.

Note on the elevations that the top of the chimney is to be a minimum of 2'0" above any portion of the building (roof) located within 10'0" measured horizontally but shall not be less than 3'0" above the highest point where the chimney passes through the roof per CRC R1003.9.

All chimneys serving appliances/fireplaces that burn solid fuel shall have spark arrestors per CRC R1003.9.2. Spark arrestors shall meet all four requirements of CRC R1003.9.2 (net free area, screen, openings, accessible for cleaning).

Factory built fireplaces and chimneys shall comply with CRC R1004 and R1005.

Make, model, listing information, ICC Research Report #, etc, of the fireplace/chimney, to be noted on the drawings.

Specify the manufacture, model & ICC report number of zero clearance fireplace. Provide

manufacture's instruction at job site for inspection.

Factory built fireplaces shall be tested in accordance with UL 127 per CRC R1004.1.

Hearth extensions for factory-built fireplaces shall be in accordance with the listing per CRC R1004.2

Exterior air supply shall be provided for factory built of masonry fireplaces to assure adequate fuel combustion per CRC R1006.1.

Per CMC 907.1 and 908.1, decorative appliances for installation in vented fireplaces and vented gas fireplaces shall not be installed in bathrooms or bedrooms unless the appliance is listed and the bedroom or bathroom has the required volume in accordance with CMC Section 701.2 with the exception of direct-vent gas fireplaces.

- Chimneys shall also comply with CMC Chapter 8, as applicable.

BR36

FIREPLACES- GREEN CODE REQUIREMENTS

4.503.1 Any installed gas fireplace shall be a direct-vent sealed-combustion type. Any installed woodstove or pellet stove shall comply with US EPA Phase II emission limits where applicable. Woodstoves, pellet stoves and fireplaces shall also comply with applicable local ordinances (EPA-II rated or on APCD website as an approved device).

BR37

OUTLETS WITH HOSE ATTACHMENTS

Potable water outlets with hose attachments, other than water heater drains, boiler drains, and clothes washer connections, shall be protected by a nonremovable hose bibbtype backflow preventer, a nonremovable hose bibbtype vacuum breaker, or by an atmospheric vacuum breaker installed not less than 6 inches above the highest point of usage located on the discharge side of the last valve. In climates where freezing temperatures occur, A listed self-draining frostproof hose bibb with an integral backflow preventer or vacuum breaker shall be used. Cpc 603.5.7

BR38

NIPOMO GREYWATER FOR NEW HOMES

New residences shall have washing machines/laundry trays plumbed for grey-water

systems pursuant to Chapter 16 of the Uniform Plumbing Code (Greywater Systems).

BR39

GAS LINE SIZING REQUIRED

1. Determine the type of fuel and pressure to be used.
2. Convert from BTU's to CFH. (divide BTU's by 1100 for Natural Gas, and 2500 for Propane)
3. Determine the type of piping materials to be used.
4. Measure the length of gas piping from the meter to the most remote outlet on the system.
5. In the appropriate table based on pressure and material select the length in feet row showing that distance or the next longer distance.
6. Start at the most remote outlet, find in that row the amount of fuel required for that appliance or the next higher amount.
7. At the top of the column will be the correct pipe size.
8. Using the same process work backwards down the main line and add gas demand at each node and then size that section of pipe all the way back to the meter.
9. Size each section that was not already sized by measuring the distance from that appliance back to the meter. Use that row for sizing that section of pipe from that appliance only back to the main line already sized.

BR40

INTAKE AIR OPENINGS

Mechanical and gravity outdoor air intake openings shall be minimum 10 feet from vents, chimneys, plumbing vents, streets, etc. per CRC R303.5.1.

When a source of contaminant is located within 10 feet or an intake opening, the opening shall be at least 2 feet below the contaminant source.

Note: Exhaust from dwelling unit toilet rooms, bathrooms and kitchens are not considered to be hazardous or noxious.

BR41

RESIDENTIAL RAMPS

Shall comply with CRC R311.8.

BR42

PATIO COVERS

Shall comply with Appendix H per AH101.1.

BR43

VAPOR RETARDER PLACEMENT BELOW SLAB ON GRADE

Please note and show in a detail the vapor retarder (6 mil visqueen) placed on top of the sand per CRC R506.2.3: A 6 mil (0.006 inch) polyethylene or approved vapor retarder with joints lapped not less than 6 inches shall be placed between the concrete floor slab and the base course or the prepared subgrade where no base course exists.

OR

Provide specific detail approved by soils engineer and architect/engineer of record.

2013 RESIDENTIAL ENERGY PLAN REVIEW CHECKLIST:

BR44

COMPLIANCE SOFTWARE (PERFORMANCE ONLY)

Should be one of the following:
CBECC-Res- V3, V3b and V3b1 (V3 or V3b1>Feb10, 2015)

Energy Pro version 6.3 or 6.4

Right-Energy Title 24 v1.1

[Link to CEC approved software](#)

BR45

CF-1R FORM

Should comply with the following:

Signed and dated by:

Designer and/or Owner

Documentation Author

Filed on the plans

Building "Complies" according to the CF-1R Form

Correct Climate Zone listed

Has a registration number and water mark

BR46

MANDATORY FEATURES

Should be noted on the plans.

BR47

CF-1R FORM

Should match the plans concerning the following:
Conditioned Floor Area for all floor types (i.e. slab on grade, raised floor, etc.)

Front Orientation of the building

Envelope

Insulation for walls, ceilings, and floors (from Reference Joint Appendix JA4)

Window area and orientation

U-factor and SHGC values for fenestration (a window schedule required upon Plan Checker's request)

Exterior shading (i.e. overhangs, fins, exterior shades)

HVAC

Efficiencies of HVAC equipment

Duct Insulation

Indoor Air Quality and Mechanical Ventilation (Mandatory Measures)

Water Heating

Efficiency and Type of Water Heating/Boiler equipment (i.e. storage, instantaneous, etc.)

Distribution Type (i.e. recirculating, standard, pipe insulation credit, etc.)

Pipe Insulation Values (Mandatory Measures)

Lighting

All lighting is high efficacy lighting (i.e. fluorescent, LED) or meets applicable alternatives (Mandatory Measures)

BR48

SPECIAL FEATURES

Must be verified on the plans and highlighted for the inspector (i.e. Thermal Mass, Radiant Barrier, water recirculation).

BR49

HERS MEASURES

Must be verified on the plans and highlighted for the inspector [i.e. Duct Leakage, Refrigerant Charge, Airflow (Fan Flow) and Watt Draw]

BR50

CF-2&3R FORMS TO BE VERIFIED AT FINAL

Please note on the plans to required CF-2&3R forms to be verified by the inspector.

2013 Residential CAL GREEN Required (Mandatory) Measures

BR51

SITE DEVELOPMENT

4.106.2 A plan is developed and implemented to manage storm water drainage during construction.

4.106.3 The site shall be planned and developed to keep surface water away from buildings. Construction plans shall indicate how site grading or a drainage system will manage all surface water flows.

BR52

WATER EFFICIENCY AND CONSERVATION PLEASE CHECK FOR LOS OSOS OR NIPOMO WATER CONSERVATION FEATURES

4.303.1 Indoor water use shall be reduced by at least 20 percent using one of the following methods.

1. Water saving fixtures or flow restrictors shall be used.

2. A 20% reduction in baseline water use shall be demonstrated.

4.303.2 When using the calculation method specified in Section 4.303.1 multiple showerheads shall not exceed maximum flow rates.

4.303.3 Plumbing fixtures (water closets and urinals) and fittings (faucets and showerheads) shall comply with specified performance requirements.

OUTDOOR WATER USE

4.304.1 Automatic irrigation systems controllers installed at the time of final inspection shall be weather-based.

BR53

ENHANCED DURABILITY AND REDUCED MAINTENANCE

4.406.1 Joints and openings. Annular spaces around pipes, electric cables, conduits or other openings in plates at exterior walls shall be protected against the passage of rodents by closing such openings with cement mortar, concrete masonry or similar methods acceptable to the enforcing agency.

BR54

CONSTRUCTION WASTE REDUCTION, DISPOSAL AND RECYCLING

A minimum of 70% of the construction waste generated at the site is diverted to recycle or salvage per Title 19 San Luis Obispo County Ordinance.

4.408.2 Where a local jurisdiction does not have a construction and demolition waste management ordinance, a construction waste management plan shall be submitted for approval to the enforcing agency.

BR55

BUILDING MAINTENANCE AND OPERATION

An operation and maintenance manual shall be provided to the building occupant owner.

BR56

V.O.C.'S -4.504.2.4 DOCUMENTATION SHALL BE PROVIDED TO VERIFY THAT COMPLIANT VOC LIMIT FINISH MATERIALS HAVE BEEN USED.

4.504.1 Duct openings and other related air distribution components openings shall be covered during construction.

4.504.2.1 Adhesives, sealants and caulks shall be compliant with VOC and other toxic compound limits.

4.504.2.2 Paints, stains and other coatings shall be compliant with product weighted MIR limits for ROC and other toxic compounds.

4.504.2.3 Aerosol paints and coatings shall be compliant with product-weighted MIR limits for ROC and other toxic compounds.

4.504.2.4 Documentation shall be provided to verify that compliant VOC limit finish materials have been used.

4.504.3 Carpet and carpet systems shall be compliant with VOC limits.

4.504.4 50% of floor area receiving resilient flooring shall comply with the VOC-emission limits defined in the Collaborative for High Performance Schools (CHPS) Low-emitting Materials List or be certified under the Resilient Floor Covering Institute(RFCI) FloorScore Program.

4.504.5 Particleboard, medium density fiberboard (MDF) and hardwood plywood used in interior finish systems shall comply with low formaldehyde emission standards.

BR57

INTERIOR MOISTURE CONTROL

4.505.2 Vapor retarder and capillary break is installed at slab on grade foundations.

4.505.3 Moisture content of building materials used in wall and floor framing is checked before enclosure.

4.506.1 Exhaust fans which terminate outside the building are provided in every bathroom

4.507.1 Whole house exhaust fans shall have insulated louvers or covers which close when the fan is off. Covers or louvers shall have a minimum insulation value of R-4.2

BR58

HVAC SIZING REQUIRED - MANDATORY !!!

Cal Green Code - 4.507. Heating and air-conditioning systems shall be sized, designed and have their equipment selected using the following methods:

1. The heat loss and heat gain is established according to ANSI/ACCA 2 Manual J—2004 (Residential Load Calculation), ASHRAE handbooks or other equivalent design software or methods.

2. Duct systems are sized according to ANSI/ACCA 1 Manual D—2009 (Residential Duct Systems), ASHRAE handbooks or other equivalent design software or methods.

3. Select heating and cooling equipment according to ANSI/ACCA 3 Manual S—2004 (Residential Equipment Selection) or other equivalent design software or methods.

Provide a mechanical plan showing equipment model no. and size with duct layout, size of ducts and fitting sizes.

BR59

INSTALLER AND SPECIAL INSPECTOR QUALIFICATIONS

702.1 HVAC system installers are trained and certified in the proper installation of HVAC systems

702.2 Special inspectors employed by the enforcing agency must be qualified and able to demonstrate competence in the discipline they are inspecting.

BR60

VERIFICATION

703.1 Verification of compliance with Cal-Green code may include construction documents, plans, specifications builder or installer certification, inspection reports, or other methods acceptable to the enforcing agency which show substantial conformance.

BR61

WATER FIXTURE RETROFIT REQUIRED

California State Plumbing Code now requires that any existing water fixtures that exceed the thresholds in the water use baseline table shown below shall be retrofitted, bringing them up to CAL Green mandatory requirements.

<u>Fixture Type</u>	<u>Maximum</u>
Flow Rate	
Showerheads	2.5 gpm @ 80 psi
Lavatory faucets nonresidential	0.5 gpm @ 60 psi
Lavatory faucets residential	2.2 gpm @ 60 psi
Kitchen faucets	2.2 gpm @ 60 psi
Water Closets	1.28 gallons/flush
Urinals	1.0 gallons/flush

BR62

WATER FIXTURE REQUIRED FLOW RATES

California State Plumbing Code now requires that all water fixtures meet the following minimum water use requirement for fixtures.

<u>Fixture Type</u>	<u>Maximum</u>
Flow Rate	
Showerheads	2.0 gpm @ 80 psi
Lavatory faucets nonresidential	0.5 gpm @ 60 psi
Lavatory faucets residential	2.2 gpm @ 60 psi
Kitchen faucets	1.5 gpm @ 60 psi
Water Closets	1.28 gallons/flush
Urinals	0.5 gallons/flush

GBO requirements

BR63

GREEN BUILDING CHECKLIST FOR HOMES < 2,500 SQUARE FEET

New homes 2,500 SF or less, shall submit a green building checklist to include on the building plans one of the following (no additional third party inspection is required for section 19.08.040 C, verification of these requirements shall be completed by the County Planning and Building Department):

1. Green Point Rated, achieving a minimum of 75 points. The project is not required to exceed current Title 24 Part 6 energy requirements as a part of this checklist.

(<http://www.builditgreen.org/guidelines--checklists/>)

2. LEED (Leadership in Energy and Environmental Design) for Homes achieving a minimum of 40 Points. The project is not required to exceed current Title 24 Part 6 energy requirements as a part of this checklist. (<http://new.usgbc.org/>)

3. CAL Green Tier 1. The project is not required to exceed current Title 24 Part 6 energy requirements as a part of this checklist. (<http://www.bsc.ca.gov/home/calgreen.aspx>)

PROVIDE A CHECKLIST ON THE PLANS FOR ONE OF THE ABOVE OPTIONS.

BR64

THIRD PARTY VERIFICATION FOR HOMES > 2,500 SQUARE FEET

New homes greater than 2,500 SF shall complete third party verified certification (you will have to hire a third party certification service). Certification shall include one of the following: (a \$500 incentive plan check credit is available)

1. Green Point Rated with 75 points minimum (<http://www.builditgreen.org/guidelines--checklists/>); or

2. LEED for Homes Certified. (<http://new.usgbc.org/>)

PROVIDE ONE OF THE ABOVE COMPLETED CHECKLISTS ON THE PLANS. ADD THE THIRD PARTY VERIFICATION REQUIREMENT ON THE TITLE SHEET, ALONG WITH THE NAME AND PHONE NUMBER OF THE CERTIFIED THIRD PARTY VERIFIER YOU WILL BE WORKING WITH THROUGHOUT THE CONSTRUCTION PHASE OF THE PROJECT.

BR65

OUTDOOR WATER REQUIREMENTS

Outdoor Water: New Construction shall comply with CAL Green Tier 1 for outdoor water requirements. This means a Landscaping and Irrigation Plan is required with your new house.

Cal Green Mandatory Measures: (With Tier 1 required this becomes mandatory)

4.304.1 Irrigation controllers. Automatic irrigation system controllers for landscaping provided by the builder and installed at the time of final inspection shall comply with the following:

1. Controllers shall be weather- or soil moisture-based controllers that automatically adjust

irrigation in response to changes in plants' needs as weather conditions change.

2. Weather-based controllers without integral rain sensors or communication systems that account for local rainfall shall have a separate wired or wireless rain sensor which connects or communicates with the controller(s). Soil moisture-based controllers are not required to have rain sensor input.

Cal Green Tier I:

A4.304.1 Install a low-water consumption irrigation system which minimizes the use of spray type heads.

A4.304.2 A rainwater capture, storage and re-use system is designed and installed.(optional)

A4.304.3 A water budget shall be developed for landscape irrigation. (optional)

A4.304.4 Provide water efficient landscape irrigation design that reduces the use of potable water; does not exceed 65 percent of ETo times the landscape area.

PROVIDE AND INCORPORATE INTO THE PLANS A SEPARATE LANDSCAPE AND IRRIGATION PLAN BASED ON THE ABOVE CRITERIA.

Residential SLO Green Building Code Required Measures.

BR66

HOME ENERGY RATING REQUIRED FOR ADDITIONS AND/OR ALTERATIONS

Your permit valuation for your addition/alteration is over \$10,000. Therefore, per the San Luis Obispo County Green Building Ordinance, you are required to hire a certified Home Energy Rating System (HERS) rater to perform a Home Energy Rating prior to construction completion. See the attached Green Building Ordinance handout for links to companies that perform HERS ratings.

<http://www.slocounty.ca.gov/Assets/PL/building/GBO-res.pdf>

BR67

FUTURE CONDUITS FOR PV SOLAR SYSTEM REQUIREMENTS

New Construction: Plans shall identify a conduit system from the main electrical panel to an accessible location. Location may be either attic space, roof structure, or an area

onsite designated for future renewable energy generation to accommodate a point of connection on the load side of the electrical service disconnecting means. The conduit system shall be sized per Table 19.08.040(H)(1). The County recognizes there are multiple service configurations and options currently available. Service options not listed in Table 19.08.040(H)(1) shall default to CEC Article 690 and 705 requirements, where conduit shall be sized to accommodate a branch circuit sized at 20% of the rating of the busbar. Renewable energy connections installed on the supply of the service disconnecting means are permitted as allowed per the CEC, however, shall meet all local Utility requirements, in addition, shall maintain the gear's product listing (i.e. UL or equivalent listing agency).

Table 19.08.040(H)(1)

Minimum Conduit Size Requirements for a Future Renewable energy System

Service Rating Renewable Capacity Conduit Size Required

100A 20 Amps @ 120 Volts (1) 3/4" Conduit

120A 24 Amps @ 120 Volts (1) 3/4" Conduit

150A 30 Amps @ 120 Volts (1) 3/4" Conduit

200A 40 Amps @ 120 Volts (1) 1" Conduit

400A 80 Amps @ 120 Volts (1) 1-1/4" Conduit

BR68

RADIANT BARRIER ROOF SHEATHING REQUIRED FOR NEW CONSTRUCTION, ADDITIONS AND/OR ALTERATIONS

Per the SLO County Green Building Ordinance all for new construction, replacement roof sheathing and addition roof sheathing shall be radiant barrier. Please call this out BOLDLY on your floor plans and framing plans.

BR69

TIMER SWITCH REQUIRED FOR ALL OUTDOOR HEATING APPLIANCES

Per the SLO County Green Building Ordinance; All outdoor non-renewable sources of heat shall be on mechanical timers with a maximum of 4 hours' time limit. Exception: Portable propane heaters with tanks 5 gallons or less. Please call this out on your floor plans.

BR70

**WATER HEATER RECIRCULATING PUMPS
REQUIRED**

Per the SLO County Green Building Ordinance; for new construction or when alterations or additions exceed 50% of habitable space, an on-demand recirculating system shall be installed. Please call this out on your floor plans.